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Chen et al.

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(54) **COLLAPSIBLE ROCKING CHAIR**

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(51) **Int. Cl.**[7] **A47D 1/02**
(52) **U.S. Cl.** **297/16.1**; 297/DIG. 11
(58) **Field of Search** 297/16.1, 440.15, 297/DIG. 11, 440.16, 440.11, 451.3

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,553,786	A	*	11/1985	Lochett, III et al.	297/DIG. 11 X
5,207,478	A	*	5/1993	Freese et al.	297/16.1
5,269,591	A	*	12/1993	Miga, Jr. et al.	297/16.1 X
5,460,430	A	*	10/1995	Miga, Jr. et al.	297/DIG. 11 X
5,503,458	A	*	4/1996	Petrie	297/16.1 X
5,507,564	A	*	4/1996	Huang	297/DIG. 11 X

* cited by examiner

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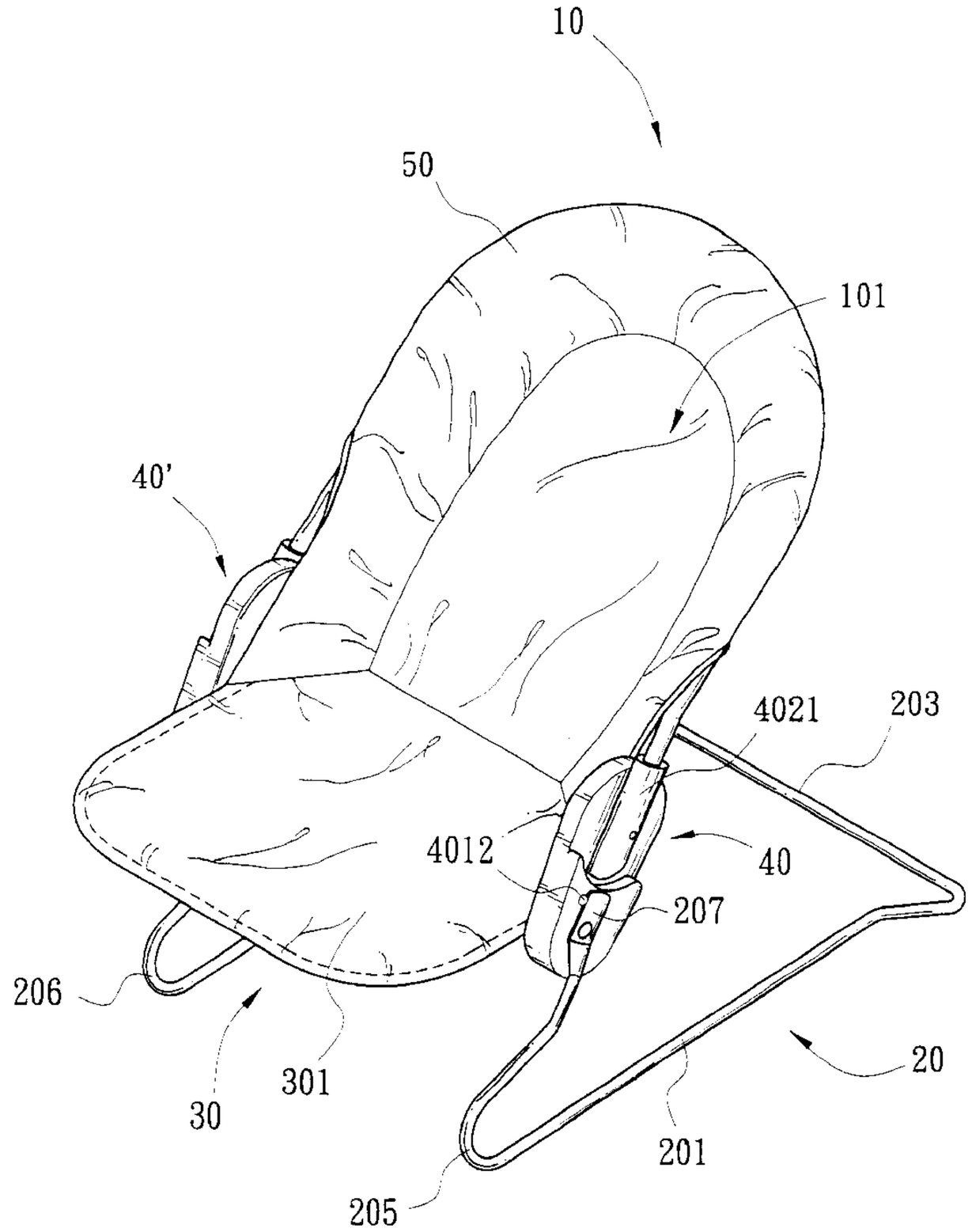
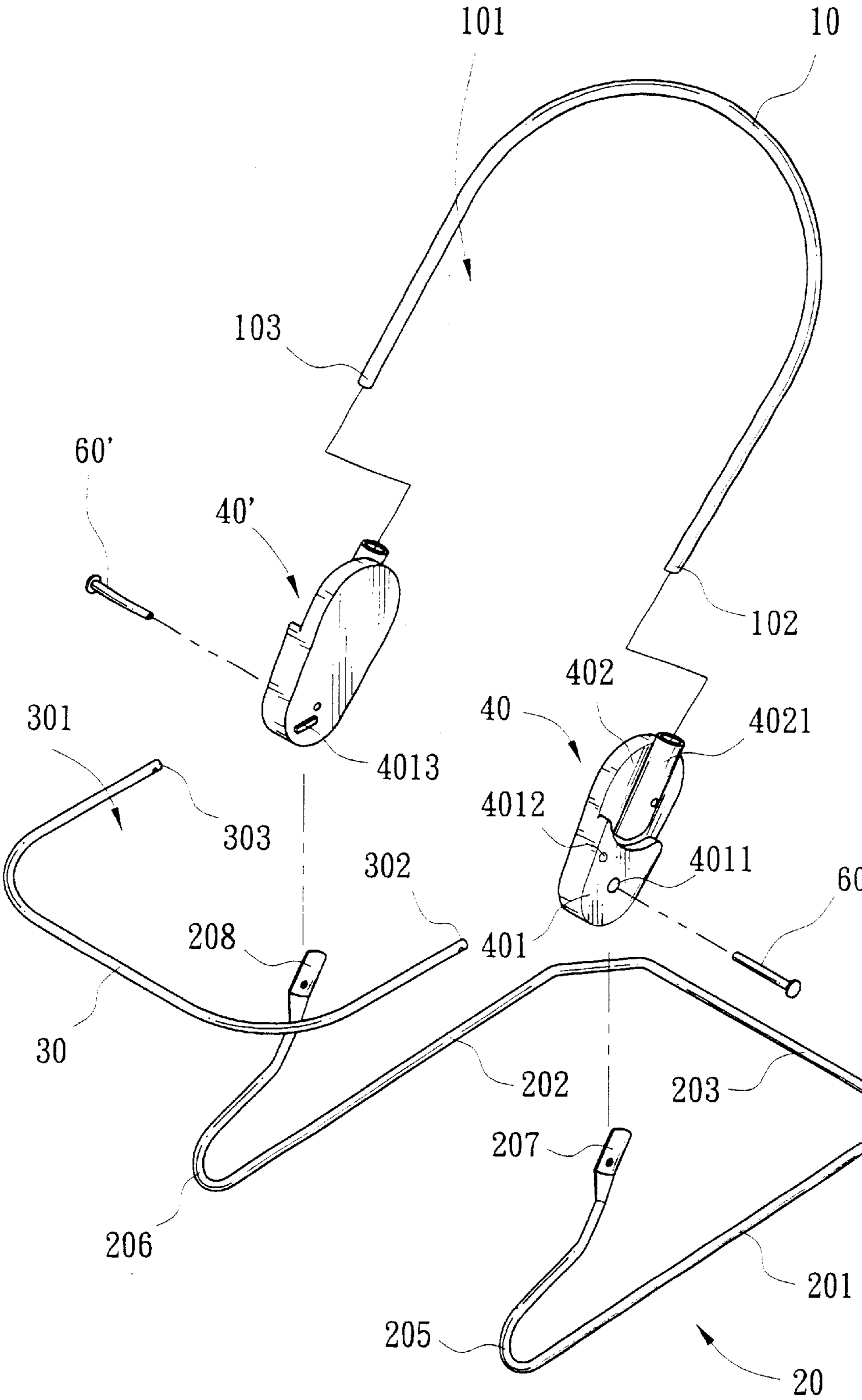
(57) **ABSTRACT**

A collapsible rocking chair is collapsed from an unfolded position to a folded position. The rocking chair comprises an upper frame, a lower frame and a seat frame that pivotally mounted by pair of latches. In the unfolded position rocking chair is adapted for children to sit or lie thereon. Upper frame lower frame and seat are collapsed to a compact storage position by pivoting about latches when rocking chair is not in use.

13 Claims, 10 Drawing Sheets

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10
103
60'
40'
4013
301
303
302
208
30
206
402
40
4021
4012
4011
60
401
202
203
207
201
205
20

FIG. 1

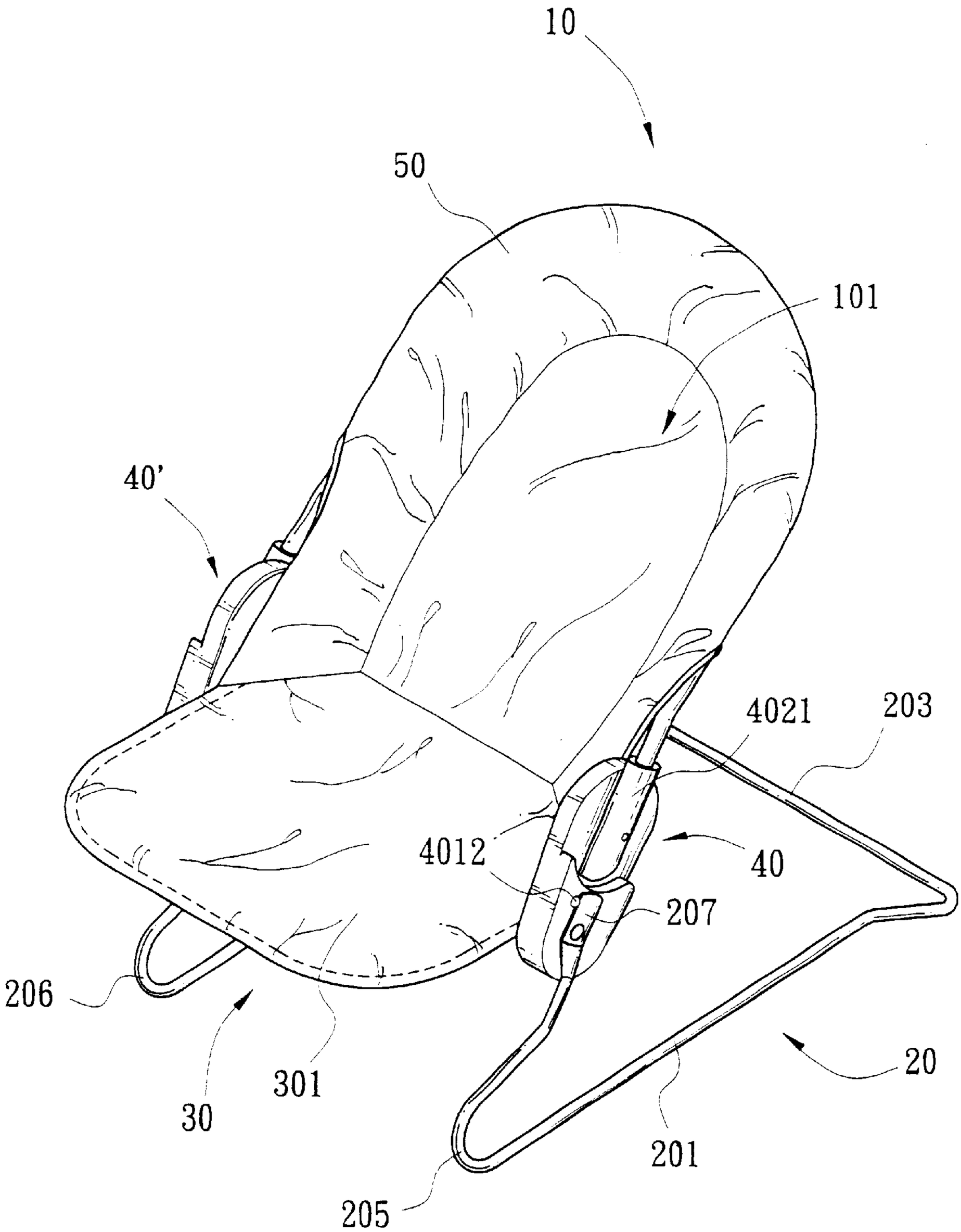

FIG. 2

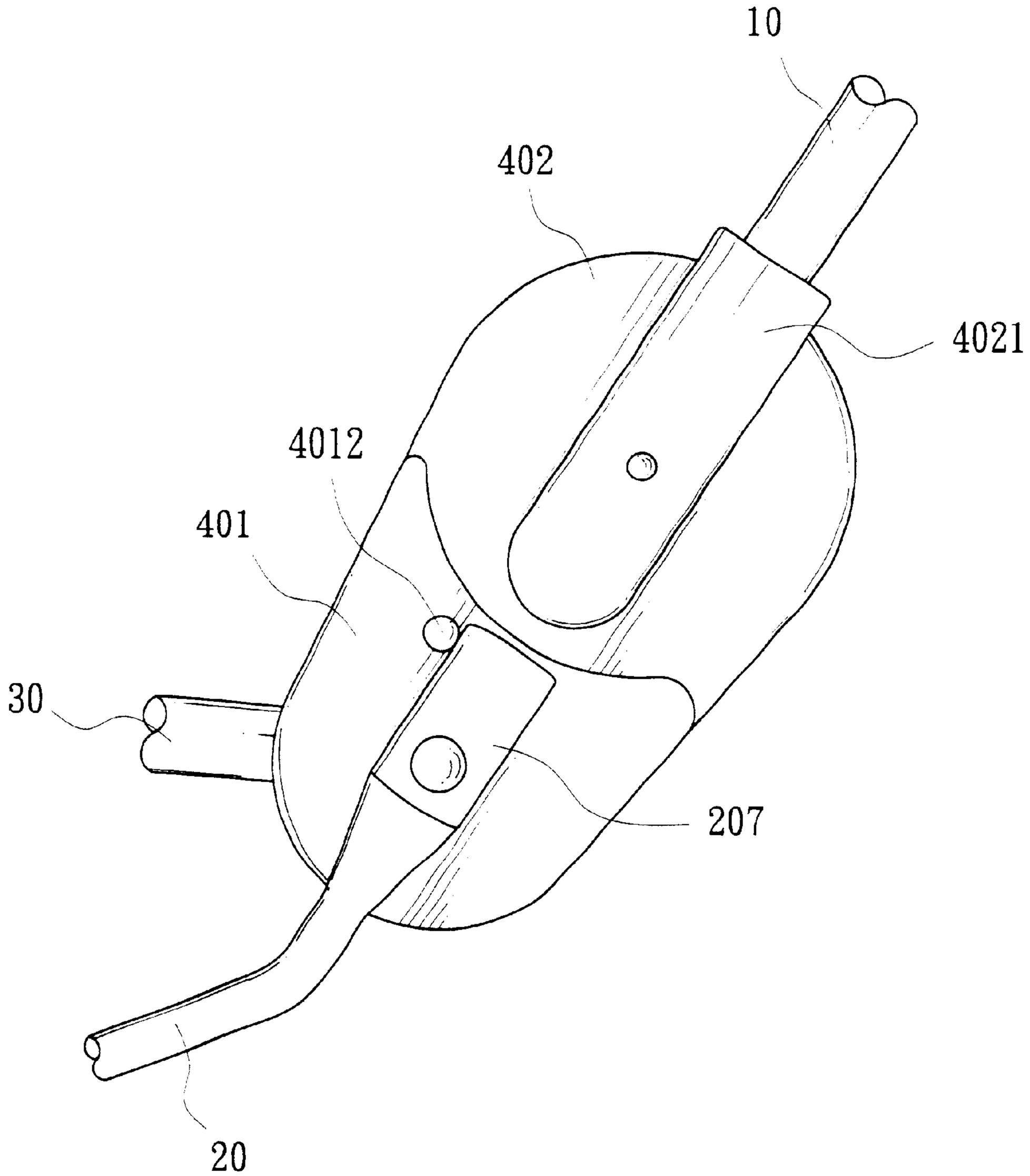

FIG. 3

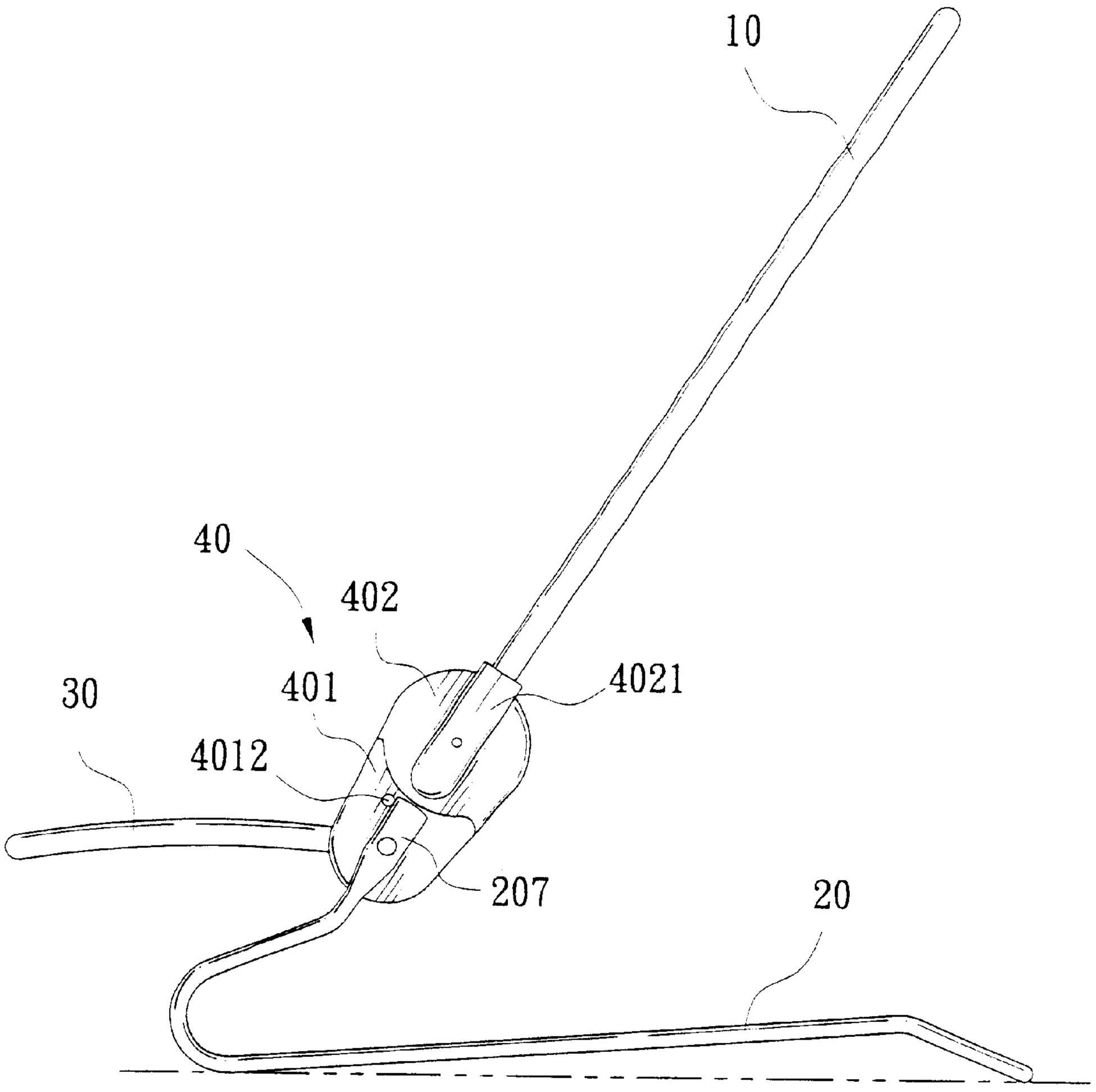

FIG. 4A

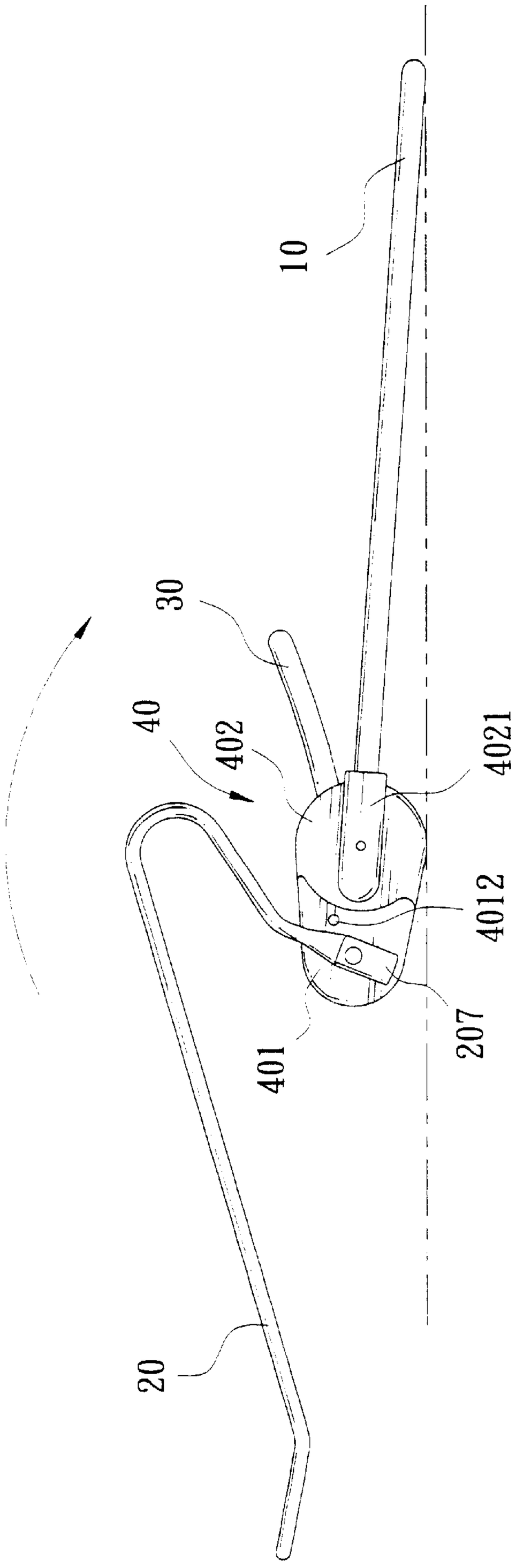

FIG. 4B

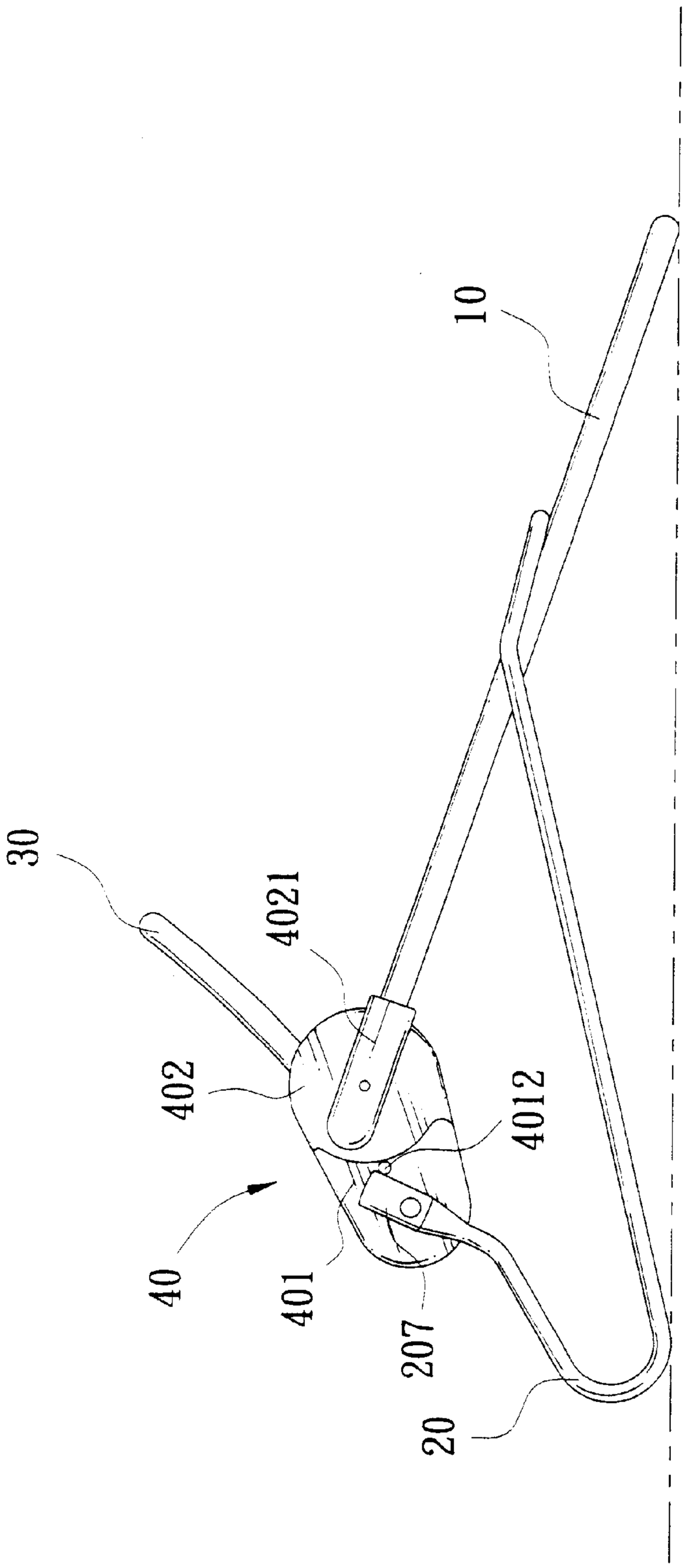

FIG. 4C

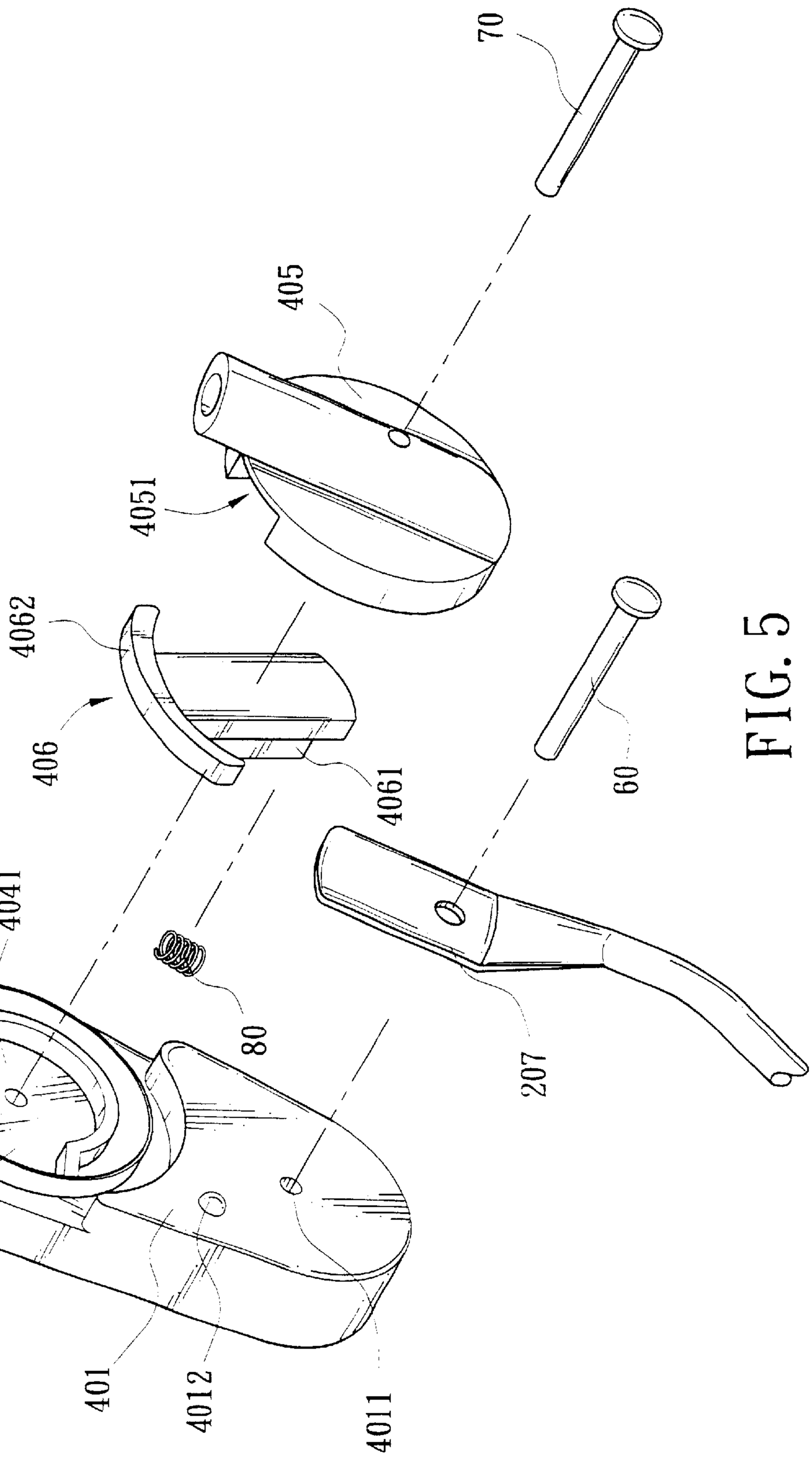
70
405
4051
4062
406
061
60
404
4043
4041
80
207
4042
401
4012
4011

FIG. 5

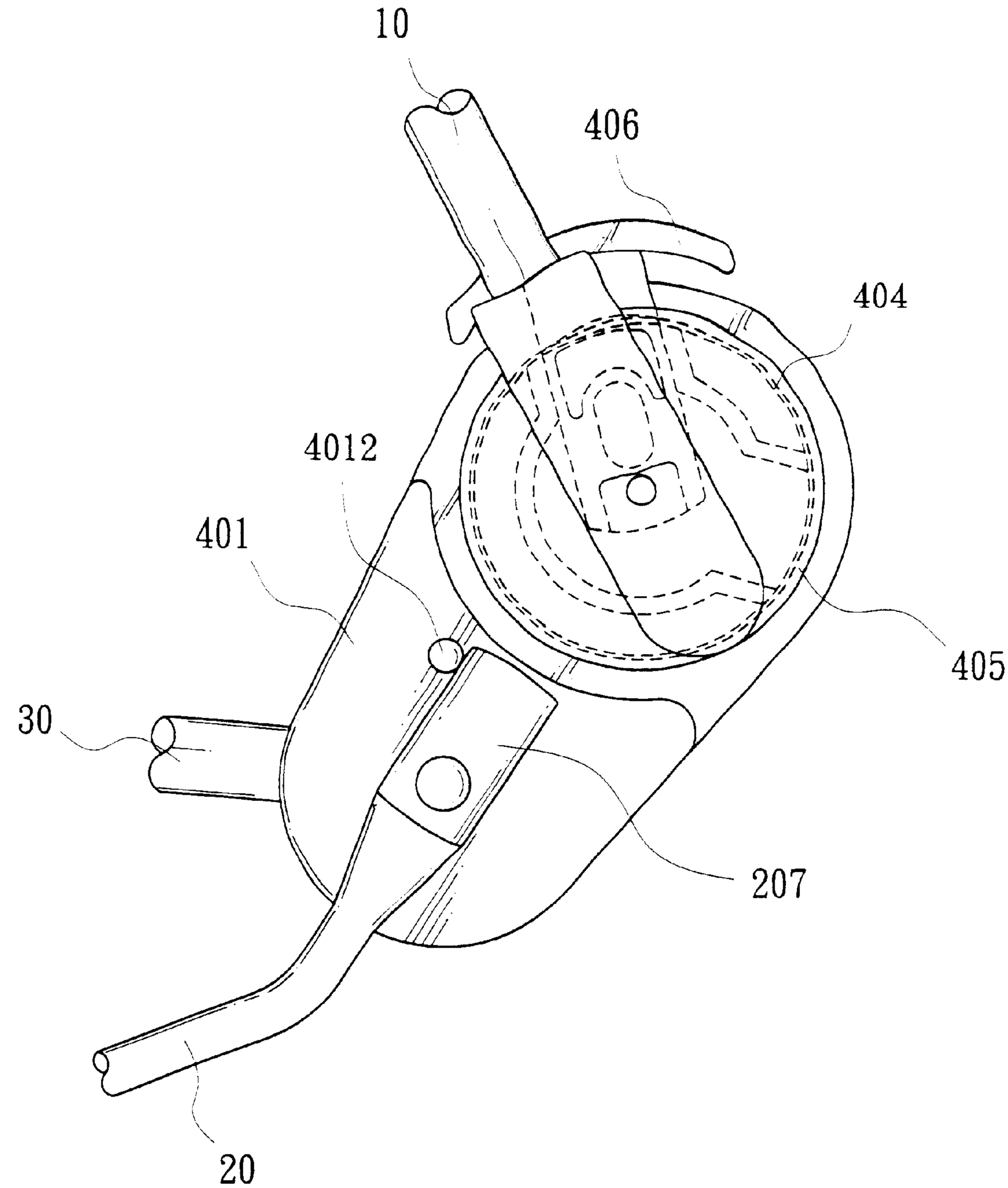

FIG. 6A

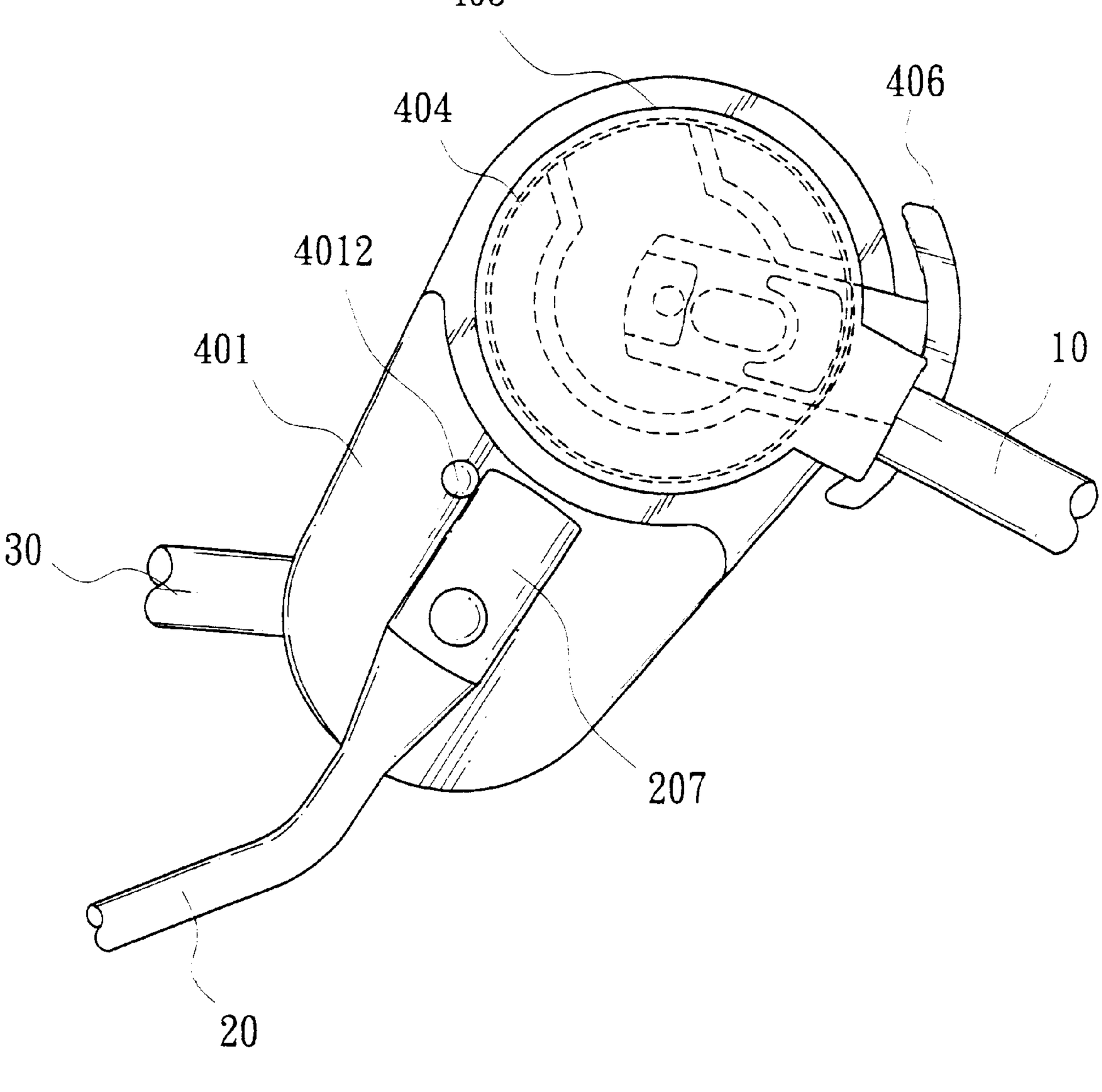

FIG. 6B

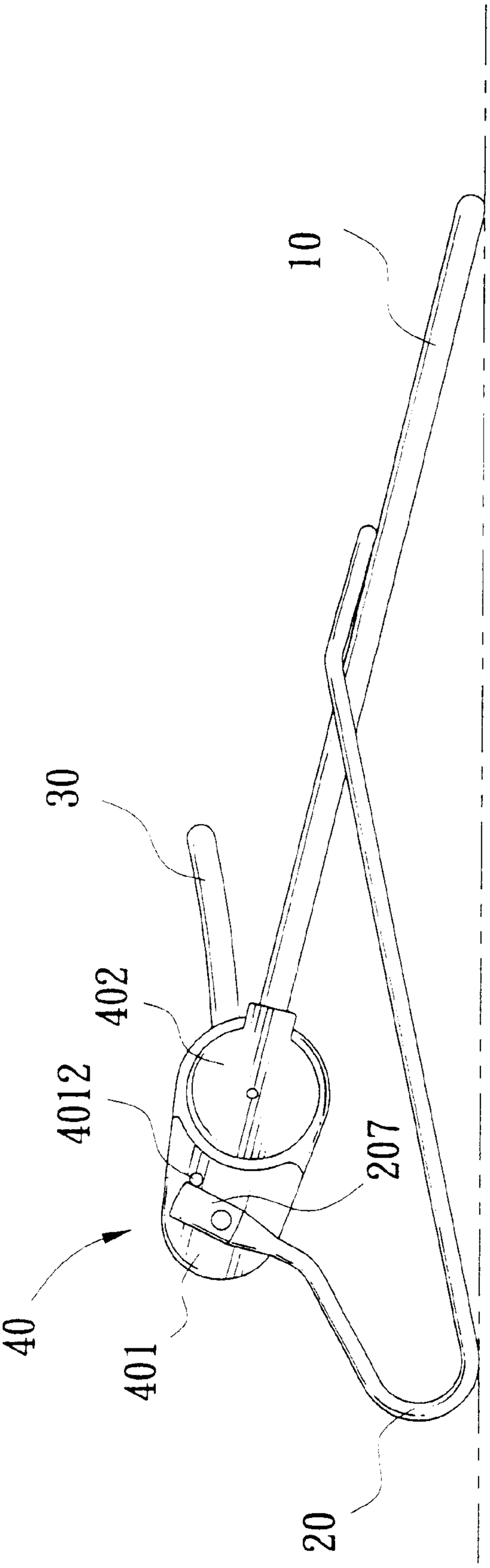

FIG. 7

COLLAPSIBLE ROCKING CHAIR

BACKGROUND OF THE INVENTION

1. Field of Invention

The present invention relates to the art of rocking chair and more particularly to a collapsible rocking chair intended for children.

2. Related Art

Conventionally, rocking chairs for children are classified as rocker supported rocking chairs and spring supported rocking chairs. A rocker supported rocking chair has a curved member on the bottom for allowing a rocking movement. As to spring supported rocking chairs, a number of prior art disclose such rocking chairs e.g., U.S. Pat. Nos. 4,553,768, 5,187,826, 5,269,591 and 5,503.458. Generally speaking, a spring supported rocking chair comprises a bottom frame, a seat frame and a back frame. The bottom frame disposes on the ground and a back frame connects to the bottom frame. The fabric covers on seat frame and back frame. Back frame keeps an angle or a distance with the bottom frame such that children seated or recumbent on the chair may rock up and down.

However, the previous designs suffered from a disadvantage. That is bottom frame. seat frame and back frame are affixed one another. It is understood that a considerable receiving space is required for such rocking chair when it is not in use. There is an improved detachable rocking chair available now. But it is unsatisfactory for the purpose for which the invention is concerned because the assembly and disassembly thereof are tedious.

Thus, it is desirable to provide a novel collapsible rocking chair in order to overcome the above drawbacks of prior art.

SUMMARY OF THE INVENTION

It is therefore an object of the present invention to provide a collapsible rocking chair. The collapsible rocking chair is collapsed to a compact storage position when it is not in use.

The collapsible rocking chair of the present invention is collapsed from an unfolded position for children to use to a folded position for storage. This collapsible rocking chair comprising an upper frame, a lower frame and a seat frame that pivotally mounted by pair of latches. In the unfolded position, rocking chair is adapted for children to sit or lie thereon. Upper frame, lower frame and seat are collapsed to a compact storage position by pivoting about latches when rocking chair is not in use.

Further scope of applicability of the present invention will become apparent from the detailed description given hereinafter. However, it should be understood that the detailed description and specific examples, while indicating preferred embodiments of the invention, are given by way of illustration only, since various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art from this detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become fully understood from the detailed description given hereinbelow illustration only, and thus are not limitative of the present invention, and wherein:

FIG. **1** is an exploded view of a first preferred embodiment of collapsible rocking chair according to the invention.

FIG. **2** is a perspective view of the assembled FIG. **1** rocking chair;

FIG. **3** is a side view of latch of FIG. **1**;

FIG. **4**A is a side view of the FIG. **1** rocking chair in an unfolded position;

FIG. **4**B is similar to FIG. **4**A wherein the FIG. **1** rocking chair is partially collapsed;

FIG. **4**C is similar to FIG. **4**A wherein the FIG. **1** rocking chair is collapsed;

FIG. **5** is an exploded view of a latch of collapsible rocking chair of a second preferred embodiment according to the invention;

FIG. **6**A is a side view of the assembled FIG. **5** latch in an unfolded locked position of rocking chair; and

FIG. **6**B is similar to FIG. **6**A wherein the FIG. **5** latch has shifted to a second position for enabling to collapse the rocking chair; and

FIG. **7** is side view of the collapsed FIG. **5** rocking chair.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIGS. **1**, **2**, and **3**, there is shown a collapsible rocking chair constructed in accordance with the invention comprising an upper frame **10**, a lower frame **20**, a seat frame **30** and a pair of latches **40**, **40'**.

Upper frame **10** is generally a U-shaped metal tube having two ends **102**, **103** and forms a backrest **101** covered by a fabric pad **50**. Lower frame **20** is generally a U-shaped metal tube comprising two opposite bars **201**, **202** and a cross bar **203** connected one end of the two opposite bars **201**, **202** for sustaining on the ground. Two curved flexible portions **205**, **206** are extended from another end of the opposite bars **201**, **202**. Two attachment members **207**, **208** are extended from the flexible portions **205**, **206**. Seat frame **30** is also generally a U-shaped metal tube having two ends **302**, **303** and forms a seat portion **301** covered by a fabric pad **50**.

Note that latch **40'** is a mirror image of latch **40**. Thus, only latch **40** is described below for the sake of brevity.

Referring to FIG. **3** specifically, latch **40** comprises a first connection portion **401** having a hole **4011** and a second connection portion **402** having a tube member **4021**. A positioning member **4012** on the outer surface adjacent the hole **4011** whose two sides formed the two fixed positions and a stopping member **4013** on the inner surface. Referring to FIG. **2** specifically, the attachment member **207** pivotally connects to the hole **4011** of the latches **40** by a pin **60**. The pin **60** inserts through the latch **40** to pivotally mount the seat frame **30** on reverse side of the first connection portion **401**. The two ends **102**. **103** of upper frame **10** inserts to the tube member **4021** of the second connection portion **402**. Such that rocking chair is configured to allow a child to sit or lie thereon. Also, lower frame **20** keeps an angle or a distance to upper frame **10** by the flexible portions **205**, **206**. The attachment member **207** is against the positioning member **4012** in the first fixed position and seat frame **30** is against the stopping member **4013**. As a result, referring to FIG. **4**A the seated or recumbent child may rock up and down a little about the flexible portions **205**, **206**.

Referring to FIG. **4**B, in collapsing the rocking chair, first fold seat frame **30** toward upper frame **10** with respect to latches **40**. Then fold lower frame **20** toward upper frame **10** with respect to pins **60** until the attachment members **207** is against positioning members **4012** in a second fixed position. Referring to FIG. **4**C, finally fold seat frame **30** and lower frame **20** toward upper frame **10**, thus forming a compact rocking chair for facilitating storage.

It is found that upper frame **10** is not moved during collapsing since it is inserted in tube member **4021** and in a

fixed relationship with respect to the latch **40**. As such, rocking chair is not collapsed to its minimum storage space. Accordingly, this second embodiment is provided as a modification of the first one aimed at changing the position of upper frame **10** during collapsing so as to fold the rocking chair in its minimum storage space when not in use. Referring, to FIG. **5**, there is shown a latch **40** of collapsible rocking chair of a second preferred embodiment according to the invention.

A pivot base **404**, a cover **405**, and a press button **406** are provided on latch **40**. Pin **70** is inserted through tube member **4021**, cover **405**, press button **406**, and pivot base **404**. As such, cover **405** is pivot with respect to pivot base **404** about pin **70**. Press button **406** comprises a press member **4062** and a positioning member **4061**. Pivot base **404** has a center recess **4041** and two positioning channels **4042**, **4043** each communicating between the recess **4041** and the periphery of pivot base **404**. Cover **405** has an opening **4051**. In a configuration, positioning member **4061** is inserted into opening **4051** and positioning channel **4042** to reach recess **4041**, while press member **4062** is on the outside of opening **4051**. Also, spring **80** is anchored in positioning member **4061** for providing an elastic movement of the positioning member **4061** when it is activated.

Referring to FIGS. **6**A, **6**B, and **7**, the collapsing operation of the FIG. **5** rocking chair is now described. First, press down the press member **4062** to cause positioning member **4061** to clear positioning channel **4042** (i.e., first position) as shown in FIG. **6**A. Then rotate the press member **4062** to alien with the other positioning channel **4043**. At the same time, release the press member **4062** to cause positioning member **4061** to move upward into the other positioning channel **4043**. Thus, cover **405** is secured in this second position as shown in FIG. **6**B. As a result, upper frame **10** is moveable between first and second positions. Finally, perform a collapsing operation the same as that described above in the first embodiment. Thus, a collapsed rocking chair is obtained. As shown in FIG. **7**, upper frame **10** is aligned with latch **40** as compared to the acute angle formed between upper frame **10** and latch **40** in FIG. **4**C. As an end, the rocking chair is collapsed to a more compact storage position.

The invention being thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.

What is claimed is:

1. A collapsible rocking chair comprising:

an upper frame having a backrest portion and two ends;

a pair of latches each including a first connection portion defining at least two stop positions and a second connection portion connected to a respective end of the upper frame;

a lower frame comprising two opposite bars and a cross bar connecting one end of the two opposite bars for resting on the ground, two flexible portions attached to another end of the opposite bars for keeping an angle or a distance with the upper frame, and two attachment members extended from the flexible portions which are pivotally engaged to the first connection portion stop positions and movable between the two for keeping the upper frame and the lower frame in an unfolded position or a folded position; and

a seat frame having a seat portion and two ends connected to the latches.

2. The collapsible rocking chair of claim **1**, wherein the first connection portion of each latch comprises a positioning member whose two sides formed the two stop positions for positioning the attachment members.

3. The collapsible rocking chair of claim **1**, wherein the second connection portion of each latch comprises a tube member for receiving the upper frame.

4. The collapsible rocking chair of claim **1**, wherein each flexible portion of the lower frame is curved.

5. A collapsible rocking chair comprising:

an upper frame having a backrest portion and two ends;

a pair of latches each including a second connection portion connected to a respective end of the upper frame and a first connection portion, both of them defining at least two stop positions;

a lower frame comprising two opposite bars and a cross bar connecting one end of the two opposite bars for resting on the ground, two flexible portions attached to another end of the opposite bars for keeping an angle or a distance with the upper frame, and two attachment members extended from the flexible portions which are pivotally engages to the first connection portion and movable between the two for stop positions keeping the upper frame and the lower frame in an unfolded position or a folded position; and

a seat frame having a seat portion and two ends connected to the latches;

wherein the stop positions in the second portion further allow the upper frame to collapse respective to the seat frame.

6. The collapsible rocking chair of claim **5**, wherein the second connection portion of each latch comprises a pivot base and a cover pivotally mounted in the pivot base.

7. The collapsible rocking chair of claim **6**, wherein the second connection portion further comprising a press button between the pivot base and the cover.

8. The collapsible rocking chair of claim **6**, wherein the pivot base comprises a center recess having two positioning channels.

9. The collapsible rocking chair of claim **6**, wherein the press button comprises a press member and a positioning member movable in the recess and inserted into the positioning channel.

10. The collapsible rocking chair of claim **6**, wherein the pivot base comprises a tube member for receiving the upper frame.

11. The collapsible rocking chair of claim **6**, wherein the first connection portion of each latch comprises a positioning member whose two sides formed the two fixed positions for positioning the attachment members.

12. A collapsible rocking chair comprising:

an upper frame having a backrest portion and two ends;

a pair of latches each including a first connection portion having a positioning member to provide at least two stop positions and a second connection portion connected to a respective end of the upper frame;

a lower frame comprising two opposite bars and a cross bar connected one end of the two opposite bars for resting on the ground, two flexible portions attached to another end of the opposite bars for keeping an angle or a distance with the upper frame, and two attachment members extended from the flexible portions which are pivotally engaged to the first connection portion; and

a seat frame having a seat portion and two ends connected to the latches;

wherein the attachment members are structured to stop at two generally opposite points of the positioning

member, the opposite points serving as the stop positions to allow the upper frame and the lower frame to be in either an unfolded position or a folded position.

13. The collapsible rocking chair of claim **12**, wherein the second connection portion comprises a pivot base, a cover pivotally mounted in the pivot base for receiving one end of the upper frame, and a press button engaged with the cover;

the pivot base comprises a recess having two positioning channels, said two positioning channels serving as the stop positions of the second connection portion for the press button to thus allow the upper frame to collapse respective to the seat frame.

* * * * *